

### R E M A R K S

Careful review and examination of the subject application are noted and appreciated.

The present invention concerns a system generally comprising a formatter, an error correction encoder, an interleave module, an inserter and a turbo encoder. The formatter may be configured to format a plurality of data frames of a transport stream by inserting a plurality of synchronization data to produce a block stream. The error correction encoder may be configured to encode the block stream to produce an error protected block stream. The interleave module may be configured to interleave the error protected block stream to produce a data stream. The inserter may be configured to insert a synchronization signal into the data stream. The turbo encoder may be configured to encode the data stream to produce an encoded stream.

### SUPPORT FOR THE SPECIFICATION AMENDMENTS

Support for the specification amendments can be found in FIG. 13, as originally filed. Thus, no new matter has been added.

### SUPPORT FOR THE CLAIM AMENDMENTS

Support for the claim amendments and the new claims can be found in the specification, for example, on page 6 lines 7-15, page 9 lines 16-21, page 13 lines 5-12, page 15 lines 6-12, page 15

lines 17-20, in FIGS. 4, 7, 11, 12 and 13 and in the original claims 1, 5, 6, 9, 11, 15, 16 and 19, as originally filed. Thus, no new matter has been added.

**CLAIM REJECTIONS UNDER 35 U.S.C. §103**

The rejection of claims 1-20 under 35 U.S.C. §103(a) as being unpatentable over Citta et al. '889 (hereafter Citta) in view of Yi '427 has been obviated by appropriate amendment and should be withdrawn.

Citta teaches a trellis coded modulation system for HDTV (Title). Yi teaches a communications system handoff operation combining turbo coding and soft handoff techniques (Title). Citta and Yi, alone or in combination, do not appear to teach or suggest every element in the claims. Furthermore, *prima facie* obviousness to combine the references has not been established for lack of clear and particular motivation. As such, the claimed invention is fully patentable over the cited references and the rejection should be withdrawn.

Claim 1 provides a formatter, configured to format a plurality of data frames of a transport stream by inserting a plurality of synchronization data to produce a block stream. Despite the assertion on page 2, section 2, item a) of the Office Action, the Data Source 24 of Citta does not appear to have access to a transport stream from which to produce a block stream. In

particular, FIG. 2A of Citta does not show any signal generated internally to or entering the Data Source 24 that could produce a block stream. Yi does not appear to cure the lack of a transport stream in Citta. Therefore, Citta and Yi, alone or in combination, do not appear to teach or suggest a formatter configured to format a transport stream to produce a block stream as presently claimed.

*Syn insert*  
Citta also appears to be silent regarding the Data Source 24, or any other block inserting a plurality of synchronization data to the data frames of a transport stream. Yi does not appear to cure the missing insertion deficiency of Citta. Therefore, Citta and Yi, alone or in combination, do not appear to disclose or suggest formatting a plurality of data frames of a transport stream by inserting a plurality of synchronization data as presently claimed.

The Office Action also appears to be confusing the frames of video pictures as taught by Citta with the frames of a transport stream as presently claimed. In particular, column 3, lines 25-34 of Citta state that the "frames" have alternating 262 and 263 "data segments" (that match the 525 lines/frame, alternating odd and even fields of an NTSC resolution video signal) and 684 symbols at 10.76 Msymbols/second (that matches the 63.5 microsecond horizontal line period of an NTSC resolution video signal). In contrast, the claimed "frames" are of a transport stream and not video pictures. Therefore, Citta and Yi, alone or in combination, do not appear to

teach or suggest a formatter configured to format a plurality of data frames of a transport stream by inserting a plurality of synchronization data to produce a block stream as presently claimed.

Claim 1 further provides an inserter (from the original claim 5) configured to insert a synchronization signal into the data stream and a turbo encoder configured to encode the data stream. Assuming, *arguendo*, that it would have been obvious to modify Citta by replacing the trellis encoder 32 (32a or 32b) with the turbo encoder 502 of Yi (for which Applicants' representative does not necessarily agree), the resulting circuit does not teach or suggest all of the elements as claimed. In particular, the Sync Inserter 34 from FIG. 2A of Citta appears to operate on a stream that is already encoded. Consequently, Citta appears to be silent that an encoder (Viterbi or Turbo) encodes the synchronization signal inserted into the data stream. Therefore, Citta and Yi, alone or in combination, do not appear to teach or suggest an inserter configured to insert a synchronization signal into the data stream and a turbo encoder configured to encode the data stream as presently claimed.

not in claims

Furthermore, the Office Action has not established *prima facie* obviousness for lack of motivation to combine the references. The asserted motivation on page 3, lines 16-17 of the Office Action to "minimize channel noise and fading, and make the operation of

the system more efficient and reliable" appears to be based on the benefits that the turbo encoder 502 provides to an environment in Yi. However, FIG. 4 of Yi teaches the environment as having a mobile receiver 401 transitioning between two coverage areas 402 and 403 each serviced by a separate transmitter (base station A and base station B). In contrast, FIG. 2A of Citta teaches a different environment having one transmitter and one receiver in communication through a channel. Nothing in Citta appears to teach or suggest that the receiver is somehow mobile relative to the transmitter or that there is a handoff between two different transmitters as the receiver changes coverage areas. Citta does not appear to face the problems solved by Yi and so motivation to fix non-existing problems in Citta using portions of Yi would be pointless. The fact that references can be combined or modified is not sufficient to establish *prima facie* obviousness (MPEP §1243.01). Therefore, the Office Action has failed to establish *prima facie* obviousness for lack of clear and particular motivation to combine the references. Claim 6 provides similar language. As such, the claimed invention is fully patentable over the cited reference and the rejection should be withdrawn.

Claim 11 provides a converter configured to convert a symbol stream comprising a plurality of symbols into an encoded stream. Despite the assertion on page 5, lines 7-8 of the Office Action, the Post Coder 48 of Citta does not appear to convert a

stream of symbols into an encoded stream. In particular, the Viterbi decoder 46 from FIG. 2A of Citta conventionally converts a stream of symbols into a stream of data bits. Therefore, the Post Coder 48 taught by Citta does not appear to receive a stream of symbols. Even if the Viterbi decoder 46 of Citta was replaced by a well-known turbo decoder (Official Notice on page 6, lines 3-4 of the Office Action), the Post Coder 48 of Citta would received the output from the well-known Turbo decoder and not the symbol stream presented by the Tuner Demod A/D 40 of Citta. Yi does not appear to cure the deficiency of the Post Coder 48 operating on the wrong type of signal. Therefore, Citta, Yi and Official Notice, alone or in combination, do not appear to teach or suggest a converter configured to convert a symbol stream comprising a plurality of symbols into an encoded stream and a turbo decoder configured to decode the encoded stream as presently claimed.

Claim 11 further provides a turbo decoder configured to decode an encoded stream to produce a data stream. However, the Office Action has failed to establish *prima facie* obviousness to modify Citta to add a Turbo decoder. As argued above for claim 1, the motivation taken from Yi does not appear to relate to Citta. One of ordinary skill in the art would appear to have no motivation to seek an alternate solution to a non-existing handoff problem in Citta. Consequently, the asserted motivation to replace the Viterbi decoder of Citta with a well-known Turbo decoder is merely

a conclusory statement. Therefore, *prima facie* obviousness to modify Citta with a well-known Turbo decoder has not been established for lack of motivation.

Claim 11 further provides a synchronization remover (from the original claim 15) configured to remove a synchronization signal from a data stream. In contrast, page 7, lines 11-12 of the Office Action admit that Citta does not teach or suggest a synchronization removal. Furthermore, the Office Action has failed to establish *prima facie* obviousness to modify Citta to add a well-known synchronization remover for lack of motivation. In particular, page 7, line 16 of the Office Action states that motivation to modify Citta would be "to make the system more efficient." However, such a broad assertion for improvement is not clear and particular evidence of motivation. Citta may be silent regarding a synchronization remover because such a block may not be unnecessary in the receiver design of Citta. No evidence has been provided in the Office Action that adding an apparently unnecessary block would make the receiver of Citta more efficient. Therefore, the Office Action admits that Citta does not teach or suggest a synchronization remover configured to remove a synchronization signal from a data stream as presently claimed. The Office Action also fails to establish *prima facie* obviousness to add a well-known synchronization remover to the receiver of Citta for lack of motivation. Claim 16 provides language similar to claim 11. As

such, the claimed invention is fully patentable over the cited references and Official Notice and the rejection should be withdrawn.

Claim 2 provides that the transport stream defines two high definition television programs substantially simultaneously. In contrast, Citta and Yi both appear to be silent regarding two high definition television programs in any signal substantially simultaneously. Furthermore and contrary to the assertion on page 3, last three lines of the Office Action that two or more HDTV programs are inherent in broadcast transport streams, inherency requires certainty of results, not mere possibility. A broadcast transport stream can convey a single HDTV program or no HDTV programs. Thus, having two HDTV programs in a broadcast transport stream is not a certainty and thus not inherent. In addition, the fact that the references can be modified is not sufficient to establish *prima facie* obviousness (MPEP §1243.01). Therefore, Citta and Yi, alone or in combination, do not appear to teach or suggest a transport stream that defines two high definition television programs substantially simultaneously as presently claimed. Claims 7, 12 and 17 provide for similar language. As such, claims 2, 7, 12 and 17 are fully patentable over the cited references and the rejection should be withdrawn.

Claim 14 provides a de-puncture module configured to de-puncture a redundant portion of an encoded stream. In contrast,



Citta and Yi both appear to be silent regarding a de-puncture module and/or function. Furthermore, page 6, lines 1-7 of the Office Action make no arguments to add a conventional de-puncture module to Citta and/or a combination of Citta and Yi. Therefore, Citta and Yi, alone or in combination, do not appear to teach or suggest a de-puncture module configured to de-puncture a redundant portion of an encoded stream as presently claimed. Claim 19 provides language similar to claim 14. As such, claims 14 and 19 are fully patentable over the cited references and the rejection should be withdrawn.

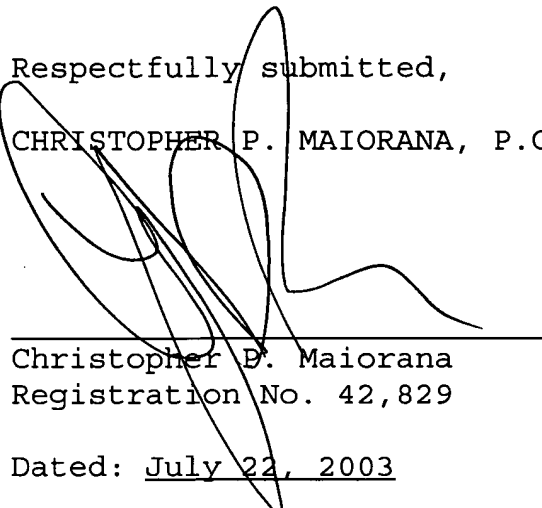
Accordingly, the present application is in condition for allowance. Early and favorable action by the Examiner is respectfully solicited.

The Examiner is respectfully invited to call the Applicants' representative at 586-498-0670 should it be deemed beneficial to further advance prosecution of the application.

If any additional fees are due, please charge Deposit  
Account No. 12-2252.

Respectfully submitted,

CHRISTOPHER P. MAIORANA, P.C.



---

Christopher P. Maiorana  
Registration No. 42,829

Dated: July 22, 2003

c/o Leo Peters  
Intellectual Property Law Department  
LSI Logic Corporation  
M/S D-106  
1621 Barber Lane  
Milpitas, CA 95035

Docket No.: 1496.00052